AMENDMENT TO THE CLAIMS

1. (currently amended) A level gauge for measuring the level of the surface of a product stored in a tank, said level gauge including a radar for transmitting microwaves towards said surface, for receiving microwaves reflected by said surface and for determining the level based on an evaluation of the time lapsed between the received and the transmitted waves, wherein:

said level gauge is adapted to transmit and receive said microwaves on ~~at least~~ a first ~~and a second frequency band and~~frequency band consisting of frequencies having a relatively high penetration through water and forming a relatively wide radiation beam;

said level gauge is further adapted to transmit and receive said microwaves on at least one second frequency band consisting of frequencies having a relatively low penetration through water and forming a relatively narrow radiation beam; and

~~the~~a center frequency of the second frequency band is at least ~~1.5~~2 times ~~the~~a center frequency of the first frequency band.

2. (canceled)

3. (previously presented) A level gauge according to claim 1, wherein said radar is coupled to a multiband antenna for transmitting and receiving said waves on said first and said second frequency band and the antenna having a seal at a feed-through in a wall of said tank, wherein said seal is made to withstand temperature and pressure differences between the interior and the exterior of the tank and to resist chemical affects by products in the tank.

4. (previously presented) A level gauge according to claim 1, wherein said radar is coupled to a broadband antenna covering the used frequencies for transmitting and receiving said waves on said first and said second frequency band and the antenna having a seal feed-through in a wall of said tank, wherein said seal is made to withstand temperature and pressure differences between the interior and the exterior of the tank and to resist chemical affects by products in the tank.

5. (previously presented) A level gauge according to claim 3, wherein said antenna is one from the group consisting of: a horn antenna, a helix antenna, a patch array multiband antenna, a reflector antenna, a log-periodic antenna.

6. (previously presented) A level gauge according to claim 4, wherein said antenna is one from the group consisting of: a horn antenna, a helix antenna, a patch array multiband antenna, a reflector antenna.

7. (previously presented) A level gauge according to claim 1, wherein said radar has circuits for generating microwaves in two or more microwave frequency bands and wherein said gauge includes a switching function to allow the radar to operate on any of said frequency bands by switching the radar to operate on a frequency band automatically chosen by an evaluation unit.

8. (previously presented) A level gauge according to claim 1, wherein said radar is a radar operating on a broad band covering the predetermined frequency bands and provided with selecting means for the choice of frequency band and wherein said gauge includes a switching function to allow the radar to be switched to operate on any of said chosen frequency bands in an automatic

manner.

9. (currently amended) A level gauge according to claim ~~3~~1, wherein the radar of the level gauge includes an RF module for generating and receiving said microwaves.

10. (previously presented) A level gauge according to claim 6, wherein said gauge includes a control unit and a signal analyzing unit.

11. (previously presented) A level gauge according to claim 10, wherein said signal analyzing unit in dependence of a performed analysis of the received microwave signal spectrum is set to determine on which frequency band the RF module shall operate.

12. (previously presented) A level gauge according to claim 11, wherein said control unit by means of a control signal from said signal analyzing unit switches the RF module to operate on a predetermined microwave frequency band.

13. (previously presented) A level gauge according to claim 9, wherein said microwave signal is transmitted from the RF module to the antenna by means of a transmission line consisting of any one from the group of: a coaxial wire, a TEM-line, a microstrip line, a stripline, a twin line.

14. (previously presented) A level gauge according to claim 9, wherein said microwave signal is transmitted from the RF module to the antenna by means of a transmitting line consisting of a wideband or multiband wave guide.

15. (original) A level gauge according to claim 14, wherein said wave guide is a ridge wave guide.

16. (original) A level gauge according to claim 15, wherein said ridge wave guide has a circular or a rectangular or an elliptical cross section.

17. (original) A level gauge according to claim 16, wherein said ridge wave guide is at least partly filled with a dielectric material for sealing or that it is provided with a dielectric cover across any cross section of its horn.

18. (previously presented) A level gauge according to claim 15, wherein said wave guide is provided with one, two or four ridges in order to transmit microwave signals in one or two or circular polarization.

19. (previously presented) A level gauge according to claim 3, wherein the sealing of said antenna is a dielectric serving as a sealing between the interior of the tank and the surroundings.

20. (canceled)

21. (canceled)

22. (currently amended) A method for measuring the level of the surface of a product stored in a tank comprising the steps of:

transmitting a microwave signal towards said surface by means of a radar,

receiving a microwave signal reflected by said surface by means of said radar,

transmitting and receiving said microwave signals on a first frequency band consisting of frequencies having a relatively high penetration through water and forming a relatively wide radiation beam,

transmitting and receiving said microwave signals on at least a second frequency band consisting of frequencies having a relatively low penetration through water and forming a relatively narrow radiation beam,

setting the center frequency of the second frequency band to more than ~~1.5~~2 times the center frequency of the first frequency band, and

evaluating the level based on the time lapsed between the corresponding transmitted and received microwave signals.

23. (previously presented) The method according to claim 22, comprising:

analyzing in a signal analyzer a first echo spectrum generated and based on the signal transmitted and received on the first frequency band,

analyzing at least a second echo spectrum generated and based on the signal transmitted and received on the at least second frequency band, and

in dependence of the analysis performed on the microwave spectra automatically setting the radar to work on only one of said frequency bands for determining the level based on the level calculation performed for the frequency band to which the radar is set.

24. (previously presented) The method according to claim 22, comprising:

analyzing in a signal analyzer a first echo spectrum generated and based on the signal transmitted and received on the first frequency band,

analyzing at least a second echo spectrum generated and based on the signal transmitted and received on the at least second frequency band, and

in dependence of the analysis performed on the microwave spectra automatically setting the radar to work on all of said frequency bands for determining the level based on an average of the calculation of the level performed for each of said frequency bands.

25. (new) A level gauge according to claim 1, wherein the first frequency band consists of frequencies within a range of 10 GHz +/- 5% or below, and the second frequency band consists of frequencies within a range of 25 GHz +/- 5% or above.

26. (new) A level gauge according to claim 1, wherein the first frequency band consists of frequencies below 12.4 GHz, and the second frequency band consists of frequencies above 22 GHz.

27. (new) A level gauge according to claim 1, wherein the center frequency of the first frequency band is about 10 GHz or below, and wherein the center frequency of the second frequency band is about 25 GHz or above.

28. (new) A level gauge according to claim 27, wherein the bandwidth of the first and second frequency bands are within the range 0.5 - 2 GHz.

29. (new) A level gauge according to claim 27, wherein the center frequency of the first frequency band is about 6 GHz or below.

30. (new) The method according to claim 22, wherein the first frequency band consists of frequencies within a range of 10 GHz +/- 5% or below, and the second frequency band consists of

frequencies within a range of 25 GHz +/- 5% or above.

31. (new) The method according to claim 22, wherein the first frequency band consists of frequencies below 12.4 GHz, and the second frequency band consists of frequencies above 22 GHz.

32. (new) The method according to claim 22, wherein the center frequency of the first frequency band is about 10 GHz or below, and wherein the center frequency of the second frequency band is about 25 GHz or above.

33. (new) The method according to claim 32, wherein the bandwidth of the first and second frequency bands are within the range 0.5 - 2 GHz.

34. (new) The method according to claim 32, wherein the center frequency of the first frequency band is about 6 GHz or below.

35. (new) A level gauge for measuring the level of the surface of a product stored in a tank, said level gauge including a radar for transmitting microwaves towards said surface, for receiving microwaves reflected by said surface and for determining the level based on an evaluation of the time lapsed between the received and the transmitted waves, wherein

said level gauge is adapted to transmit and receive said microwaves on a first frequency band, which consists of frequencies below 12.4 GHz; and

said level gauge is further adapted to transmit and receive said microwaves on at least one second frequency band,

which consists of frequencies above 22 GHz.

36. (new) A level gauge for measuring the level of the surface of a product stored in a tank, said level gauge including a radar for transmitting microwaves towards said surface, for receiving microwaves reflected by said surface and for determining the level based on an evaluation of the time lapsed between the received and the transmitted waves, wherein

said level gauge is adapted to transmit and receive said microwaves on a first frequency band, wherein a center frequency of said first frequency band is about 10 GHz or below; and

said level gauge is further adapted to transmit and receive said microwaves on at least one second frequency band, wherein a center frequency of said second frequency band is about 25 GHz or above.

37. (new) The level gauge according to claim 36, wherein the bandwidth of the first and second frequency bands are within the range 0.5 - 2 GHz.

38. (new) The level gauge according to claim 36, wherein the center frequency of the first frequency band is about 6 GHz or below.

39. (new) A method for measuring the level of the surface of a product stored in a tank comprising the steps of:

transmitting a microwave signal towards said surface by means of a radar,

receiving a microwave signal reflected by said surface by means of said radar,

transmitting and receiving said microwave signals on a first frequency band, wherein a center frequency of said first frequency band is about 10 GHz or below,

transmitting and receiving said microwave signals on at least one second frequency band, wherein a center frequency of said second frequency band is about 25 GHz or above, and

evaluating the level based on the time lapsed between the corresponding transmitted and received microwave signals.

40. (new) The method according to claim 39, wherein the bandwidth of the first and second frequency bands are within the range 0.5 - 2 GHz.

41. (new) The method according to claim 39, wherein the center frequency of the first frequency band is about 6 GHz or below.